Material Safety Data Sheet

1. Product and Manufacturer Information

Product Name : Flux-cored solder wire, Lead alloy solder and Solders
Manufacturer Address/Telephone/Fax : Ku Ping Enterprise Co., Ltd.
TEL : 8862-8201-3987/88/89 No. 5, Lane 302, Hsin-shuh Road,
FAX : 8862-8201-2368-(2388) Hsin-Chuang City, Taipei Hsien, Taiwan

2. Ingredients and Hazards

Chemical Characteristics : Silver-gray wire with a core of flux, no odor			
Hazardous Material Classification and Figure : CONTAINS LEAD - HARMFUL CONTAINS ROSIN - IRRITANT		G	
Hazardous Ingredients Name	WT%	C.A.S. Number	Organic Standard
Tin / SN AG	62/2 (see product marking)	7440-31-5	Not Applicable
Lead / PB	36(see product marking)	7439-92-1	Not Applicable

3. Health Hazard Data

The most hazard and effects : Exposure to flux fumes during use of the product, ingestion of lead metal
Symptom of hazard : Eye irritation, headache, and irritation of the respiratory system
Hazard rating : Health: 1 Flammability: 2 Reactivity: 0

4. Emergency First Aid

Different routes of entry : Eyes, Inhalation, Ingestion
Inhalation : Remove person from exposure to fumes and restore breathing if necessary
Skin contact : Wash thoroughly with soap and water
Eye contact : Flush eyes with plenty of water and get medical attention
Ingestion : Induce vomiting and get prompt medical attention
The most serious symptom : Dizziness, nausea from flux fumes
Protective measurements : Flux concentration in air, Measurement of blood lead content.
Medical Conditions : Chemical hypersensitivity, pre-existing conditions of the lungs

5. Fire and Explosion Hazard Data

Extinguishing Media : CO_2 Chemical powder, Bubble type Extinguisher, Water
The hazard when extinguishing : Flux in cored wire solder may ignite when the solder melts in a fire.
Special firefighting procedures : Wear self-contained breathing apparatus if this material is in the vicinity of a fire.
Protective measures for firefighting man : None recommended

6. Procedures if material is spilled or released

Precautions for person : Wash hands with soap and water after handling solder wire. Do not breathe the fumes during soldering.
Precautions for environment : Solder can be reclaimed
Steps to be taken if material is spilled or released : Not applicable, material is metal wire.

7. Precautions to be taken in handling and storage

Handling : Avoid breathing smoke/fumes generated during soldering. Wash hands after handling solder metal.

Storage : Store in low humidity area to minimize tarnishing.

8. Protective measures against exposure

Material engineering control : Provide adequate exhaust ventilation (general and/or local) if necessary to meet exposure requirements. Local ventilation is preferred to minimize dispersion of smoke/fumes into the work area.		
Control parameters		
Average allowable concentration when 8 hours running TWA	Average allowable concentration when Short-time running STEL	The highest concentration allowed CEILING
Sn : 2.0mg/m^3 ; Pb : 0.05mg/m^3	Sn : 2mg/m^3 ; Pb : 0.15mg/m^3	Sn : 58.2mg/m^3 ; Pb : 38.8mg/m^3
Protective Measures Respiratory Protection : When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator should be wom. Protective gloves : Usually not required Eye protection : When soldering, use goggles or face shield Other protcctive clothing and equipment : Nome recommended		
Hygienic work practices : Wash hands thoroughly after handling chemicals or solder.		

9. Physical and Chemical Data

Material state : Solid	Appearance : Silver-gray metal wire
Color : Silver-gray metal wire	Odor : None
pH : Not applicable	Boiling point : 183℃ (361℉)
Decomposition temperature : None	Flash Point : Not applicable
Auto-ignition temperature : Not applicable	Exposure limit : Not determined
Vapor pressure : Not applicable	Vapor density : Not applicable
Specific gravity water : 1	Solubility : None in water

10. Stability and Reactivity

Stability : Stable under all conditions
Probably hazard effect under special condition : None known
Condition to avoid : Heat, Flame, Wet and soaking
Materials to avoid : Strong acids, strong oxidizing materials
Hazardous decomposition products : When heated to soldering temperatures, the fumes may contain rosin and thermal degradation products such as aliphatic aldehydes and acids.

11. Toxicological Properties

Level of Toxicity Inhalation : Fumes during soldering may irritate mucous membranes and respiratory system. High concentrations can cause headache, dizziness, narcosis, and nausea. Skin contact : Possible local irritation Eye contact : Irritation from contact with smoke from soldering Ingestion : Not likely to occur.
Dosage effect : Prolonged or repeated contact or inhalation is more serious than acute exposure.
Sensitivity : Exposure to flux fumes will have more effect on a person with chemical hypersensitivity.
Effects of chronic exposure : Breathing of flux fumes may cause respiratory system irritation, headache and irritation of the mucous membranes. Repeated ingestion of lead can result in systemic poisoning.
Special effects : None known

12. Ecological Data

Probable effect to environment :
Long term degradation products are possible.

13. Waste Disposal

Waste disposal method : Solder metal can be recycled by reclamation.

14. Delivery Information

Internatinal delivery regulation : LATA-Dangerous Goods Regulation, Not restricted
UN code : Not regulated
Domestic delivery regulation : None known
Special delivery method and precaution : None known

15. Law and Regulation

Conform to regulation : 1. Labor Safety & Sanitary Device Regulation
2. Standards for the density of hazardous materials in labor working environment
3. Identification rules for hazardous and harmful materials
4. Standards for waste disposal treatment and facility requirement
5. Road traffic safety rules

16. Additional Information

Reference : MSDS database, CCINFO CD 98-2, NIOSH/OSHA, Occupational Health Guidelines for Chemical Hazards, 1981
Prepared by : Tony Yang
Date : Feb. 15, 2001
Remark : These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.